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GB 2019665A

GB 2016215A

GB 1553354

GB 1553163

GB 1482555

GB 1318438

GB 861652

GB 811589

GB 637613

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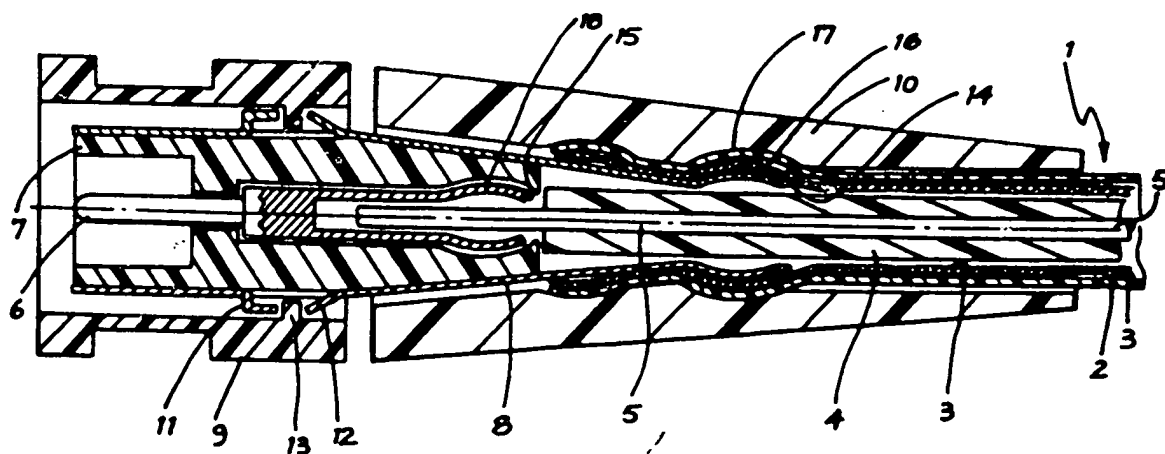
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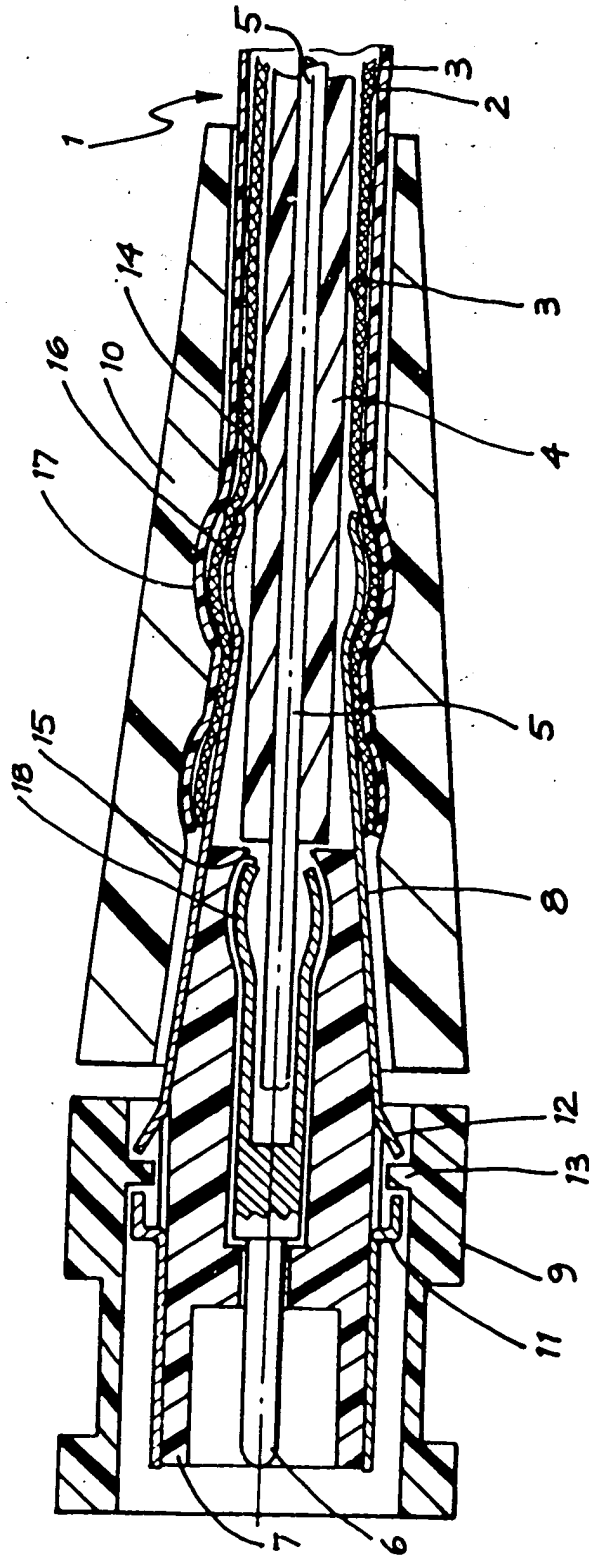
necter. No special tools are required to fix the connector to the coaxial cable. A ridge (16) may be provided on the second contact (8) to secure the outer member (10) by engaging with a recess (17). On assembly, prongs (15) securely clamp core wire (5) due to the taper of the second contact and insulation (8 and 7).

(54) Coaxial cable connector

(57) A coaxial cable connector has a central contact (6) mounted within an insulation section (7) fitted within a second contact (8) which has a leading end (14) arranged to engage the braid (3) of the coaxial cable by sliding under or over the braid. An outer member (10) is slid over the outer insulation (2) of the coaxial cable (1) to secure the con-



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SPECIFICATION

Coaxial cable connector

- 5 The present invention relates to a connector terminal for a coaxial cable.
- Prior art coaxial cable connectors are expensive to produce and usually require special tools and soldering to affix the connector to the cable or else the cable has to be specially prepared to receive the connector.

- 10 The present invention ameliorates these problems by providing a connector which is cheaper to produce than the existing connectors, and which requires no special tools to affix it to the cable and which is quicker and easier to connect to the cable than existing connectors.

- In one broad form the invention comprises
- 20 a coaxial cable connector comprising:
- a centre contact adapted to engage the centre wire of a coaxial cable;
 - a second contact adapted to engage with the braid; and
- 25 an outer member adapted to slide over the outer cover of the wire, wherein the assembled position, said second contact is insulated from said first contact and said outer member clamps the braid to the second contact.

- 30 The invention in its preferred form provided an improved coaxial cable connector whereby attachment to a coaxial cable does not require the use of special crimping tools or the use of rotational couplings such as nuts.

- 35 The preferred embodiment provides a central contact which is adapted to engage and clamp onto the centre wire of a coaxial cable. A second contact insulated from the central contact which is adapted to engage with the braid by sliding under or over the braid.

- 40 An outer member, preferably having a tapered bore slides over the outer cover of the wire, wherein the assembled position, the second contact is insulated from the first contact and clamps the first contact onto the centre wire and said outer member clamps said braid to the second contact.

- 45 This embodiment results in several advantages. One advantage is that only a single cut be made to bare the central wire. Another advantage is that no special crimping tools are necessary and the attachment of the outer member to the connector involves axial movement without any significant rotational movement.

- 50 The invention will now be described by way of example with reference to the accompanying drawing which illustrates a sectional view of one embodiment of the present invention.

- 60 The coaxial connector of the preferred embodiment comprises a central contact 6 having the end 15 shaped as prongs surrounding a recess into which the central wire of the coaxial cable can be fitted. The prongs can be
- 65 of any suitable shape, but in the embodiment

illustrated they each have a raised section 18 adjacent the end 15. The central contact 6 is held with an insulation section 7 which fits within the second contact 8.

- 70 This second contact 8 is of a two part construction split longitudinal with its leading end 14 extending free of the insulation.

- The second contact 8 is held in position by a casing 9, by means of projections 11 and 12 extending from the second contact 8 which clamps there between the projection 13 of the casing.

- An insulating jacket or outer member 10 with a tapered bore then fits over the exposed second contact 8.

- To connect the connector of the present invention to a coaxial cable it is necessary that the cable 1 be stripped to expose the core wire 5. Only a single cut is needed as compared to prior art connectors where both the core wire and the braid must be exposed separately. The jacket 10 is slipped over the wire 1 and moved away from the area of connection. The centre contact 6 is slid over the exposed core wire 5. A body section, containing the second connector 8 and the insulation 7, is then slid over the contact 6. The leading end 14 of the contact 8 slides between the braid 3 and the insulation layer 4 or between the braid 3 and the insulation layer 2. When the body section is pushed home, the crimping end 15 of the contact 6 clamps securely onto the core wire 5 as a result of the taper of the second contact 8 and the shape of the insulation 7 adjacent the crimping end 15. To secure the contact between the contact 8 and the braid 3 the jacket 10 is slid up over the wire where the engagement between the second contact 8 and the braid 3 occurs.

- A suitable locking means can be applied to secure the jacket 10 in place, such as that shown in the drawing where the second contact 8 has a ridge 16 and the jacket 10 has a complementary recess 17. Preferably the outer jacket 10 is extended to provide strain relief for the connection, to ensure that the connection remains secure during flexing of the cable.

- 115 To connect the casing 9 to connector 8 and insulation 7 the body 9 is simply pushed over the contact 8 and the projection 13 snaps over the projection 11 and is held in place by the two projections 11 and 12. In use the projection 12 acts as a spring to bias the connector against its mate to ensure intimate contact takes place between the respective contacts.

- Because of this mode of construction the connector is cheaper to produce than existing connectors, and is much more easily and speedily connected to the coaxial cable than existing connectors.

- The coaxial cable connector can be altered from that as described in the preferred em-

bodiment of the aforementioned Patent Application, to provide a further invention.

The insulator body 7 and the second contact 8 can be both made in parts for example as two separate halves to be joined together, with the second contact 8 having its leading end 14 formed of any shape whereby it can be pushed under the braid or over the braid and under the insulating layer 2 of the wire. Further the jacket 10 can be replaced by a coupling nut which mates with a threaded section on the casing 9 having an insulating layer covering the second contact 8. The shape of the nut is such that it forces the insulated second contact into engagement with the braid 3.

Similarly the casing 9 can be altered such that there is an independent spring co-acting with a threaded nut which forms part of the casing 9 and engages the insulator 7 and second contact 8, thus doing away with the protrusions 11 and 12.

As a further embodiment the central contact can be soldered to the core wire 5 can have in either its soldering form or its crimping form any desirable shape.

It should be obvious to people skilled in the art that modifications can be made to the connector described above without departing from the scope and the spirit of the present invention.

CLAIMS

1. A coaxial cable connector comprising:
a center contact adapted to engage the centre wire of a coaxial cable;
a second contact adapted to engage with the braid; and
an outer member adapted to slide over the outer cover of the wire, wherein in the assembled position, said second contact is insulated from said centre contact, said outer member clamps the braid to the second contact.

2. A coaxial cable connector according to claim 1 including a body portion to which the said outer cover is screwably engageable.

3. A coaxial cable connector according to claim 1 wherein said centre contact comprises a pronged end which is adapted to clamp around the centre wire of a coaxial cable, said centre contact being insulated from the second contact, which is of a two part longitudinal split construction, with the centre contact and second contact assembly being held in a substantially cylindrical housing.

4. A coaxial cable connector according to claim 3 wherein said second contact contain projects which interact with projections within the housing to secure said centre contact and second contact assembly within the housing.

5. A coaxial cable connector according to claim 4 wherein said second contact extends beyond the pronged end of said centre contact to engage with the braid of a coaxial cable and the outer member is a jacket which

slides into engagement with the second contact to lock the braid into engagement with the second contact and to clamp the prongs of the centre contact into engagement with the centre wire of the coaxial cable.

6. A coaxial cable connector according to claim 5 wherein said end of the second contact which engages said braid has a shape which engages with a complimentary shape in the jacket to secure the connector in position.

7. A coaxial cable connector as hereinbefore described with reference to the accompanying drawings.

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